The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A spray-pyrolysis or spray-drying plant, a plant which is constructed vertically or horizontally, comprising:

a) a reaction tube (1) accommodated within an outer tube (2) of heat-resistant steel sheeting in such a way that an annular space is formed between the two tubes,

b) an atomization system (3) located at one end of the tubes and a gas outlet (4) ~~is~~ located at the opposite end of said tubes ,

c) one or more jacket connectors (5) which lead into said annular space, optionally at the height of the atomization system or distributed over the length of the plant, and

d) optionally, gas inlet slots or nozzles (6) and (7), optionally in the form of a gas burner, at the height of the atomization system which lead into said reaction tube,

wherein said reaction tube consists of a heat-resistant, porous material.

2. (Cancelled)

3. (Previously Presented) A spray-pyrolysis or spray-drying plant according to Claim 1, wherein said reaction tube consists of a porous material which is heat-resistant up to 1200°C and in which the pore diameters are 1 to 5 μm.

4. (Currently Amended) A spray-pyrolysis or spray-drying plant according to Claim 1 ~~2~~, wherein said heat-resistant, porous material is selected from heat-resistant metal alloys and ceramic materials.

5. (Previously Presented) A spray-pyrolysis or spray-drying plant according to Claim 1, wherein said reaction tube consists of heat-resistant sintered metal, metal mesh or metal non-woven media.

6. (Currently Amended) A spray-pyrolysis or spray-drying plant ~~according to~~

~~Claim 1~~, a plant which is constructed vertically or horizontally, comprising:

a) a reaction tube (1) accommodated within an outer tube (2) of heat-resistant steel sheeting in such a way that an annular space is formed between the two tubes,

b) an atomization system (3) located at one end of the tubes and a gas outlet (4) ~~is~~ located at the opposite end of said tubes ,

c) one or more jacket connectors (5) which lead into said annular space, optionally at the height of the atomization system or distributed over the length of the plant, and

d) optionally, gas inlet slots or nozzles (6) and (7), optionally in the form of a gas burner, at the height of the atomization system which lead into said reaction tube

wherein said atomization system consists of a nozzle plate to which atomization energy is transferred by means of a piezoceramic oscillator.

7. (Previously Presented) A spray-pyrolysis or spray-drying plant according to Claim 6, wherein said nozzle plate has holes having a diameter of from 10 to 40 μm.

8. (Previously Presented) A reaction tube consisting of a gas-permeable, porous material which is heat-resistant up to 1200°C and has a pore diameter of from 1 to 5 μm.

9. (Previously Presented) A spray-pyrolysis or spray-drying process, comprising:

introducing through a jacket connector (5) into an annular space formed by a reaction tube (1) made of porous material and an outer tube (2), whereby the introduced gas flows through said porous material of said reaction tube into the reaction space within said reaction tube, resulting in the formation of a gas stream away from the surface of said reaction tube, which prevents deposition of formed particles on said surface.

10. (Previously Presented) A spray-pyrolysis or spray-drying process, comprising:

introducing a solution or suspension of a metal salt or a mixture of metal salts or a metal salt solution which comprises suspended, insoluble particles of a metal-containing compound, in finely divided form, into a reaction tube (1), in the desired stoichiometric ratio, by means of an atomization system (3), consisting of a nozzle plate, to which the atomization energy is transferred by means of a piezoceramic oscillator, where said solution or suspension

encounters a pre-heated gas flowing in through a porous wall of said reaction tube; and

said solution or suspension is dried in the gas stream to form a powder having a uniform particle size distribution and discharged at the end of the reaction tube together with the gas stream, or

said solution or suspension is to decomposed or reacted in the gas stream by supply of additional process energy, and the resultant formed particulate product is discharged at the end of the reaction tube together with the gas stream.

11. (Previously Presented) A process according to Claim 9, wherein the wall of the reaction tube is cooled constantly during exothermic reaction by the gas passing through from the outside.

12. (Cancelled)

13. (Previously Presented) A process according to Claim 9, wherein additional process energy is supplied by burning a gas with an oxidant, wherein

the air is supplied from the outside via the jacket connector (5) and the gas is added from the inside via gas connectors and inlet slots (6) and (7), or

the gas is added from the outside (5) and the air is added from the inside via gas connectors and inlet slots (6) and (7), or

the air supplied via the jacket connector (5) is electrically heated, flows through the porous wall and reacts exothermically with the stream of fuel gas added via the gas connector and inlet slots (6) and (7) and increases the reaction temperature.

14. (Previously Presented) A process according to Claim 9, wherein powder materials having an average particle size of from 0.1 to 10 μm are obtained.

15. (Previously Presented) A process according to Claim 9, wherein the powder materials obtained do not comprise hard agglomerates.

16. (Previously Presented) A process according to Claim 9, wherein the molecular

weight fraction of any desired component of the powder material obtained differs by a maximum of 1.5% compared with the corresponding molecular weight fraction in the precursor solution, based on the corresponding molecular weight fraction in the precursor solution.

17. (Previously Presented): A spray-pyrolysis or spray-drying plant, comprising:

a) a reaction tube (1) accommodated within an outer tube (2) of heat-resistant steel sheeting whereby an annular space is formed between the two tubes,

b) an atomization system (3) located at one end of the tubes and a gas outlet (4) located at the opposite end of the tubes,

c) one or more jacket connectors (5) which lead into the annular space, and

d) optionally, gas inlet slots or nozzles (6) and (7), which lead into the reaction tube,

wherein said reaction tube is a reaction tube according to claim 8.

18. (Previously Presented) A spray-pyrolysis or spray-drying process, comprising performing said process in a plate according to claim 1, wherein gas is passed through a jacket connector (5) into said annular space formed by said reaction tube (1), which is made of heat-resistant, porous material, and said outer tube (2), said gas flows through the porous material of said reaction tube into the reaction space within said reaction tube, resulting in the formation of a gas stream flowing away from the reaction tube inner surface, which prevents deposition of formed particles on said inner surface.

19. (Previously Presented) A spray-pyrolysis or spray-drying process, comprising:

introducing a solution or suspension of a metal salt or a mixture of metal salts or a metal salt solution which comprises suspended, insoluble particles of a metal-containing compound, in finely divided form, into a reaction tube (1), in the desired stoichiometric ratio, by means of an atomization system which comprises one or more single or multi-component nozzles, where said solution or suspension, where said solution or suspension encounters pre-heated gas flowing in through a porous wall of said reaction tube; and

said solution or suspension is dried in the gas stream to form a powder having a uniform particle size distribution and discharged at the end of the reaction tube together with

the gas stream, or

said solution or suspension is to decomposed or reacted in the gas stream by supply of additional process energy, and the resultant formed particulate product is discharged at the end of the reaction tube together with the gas stream.

20. (Previously Presented) A reaction tube according to Claim 8, wherein said porous material is selected from heat-resistant metal alloys.

21. (Previously Presented) A reaction tube according to Claim 8, wherein said porous material is selected from heat-resistant sintered metal, metal mesh or metal non-woven media.

22. (Previously Presented) A combination comprising a reaction tube according to Claim 8 and an atomization system connected thereto, said atomization system comprising a nozzle plate and a piezoceramic oscillator which transfers atomization energy to said nozzle plate.

23. (Currently Amended) A reaction tube according to Claim 8, wherein ~~consisting of a gas-permeable,~~ said porous material is in the shape of a cylindrical tube ~~which is heat-resistant up to 1200°C and has a pore diameter of from 1 to 5 µm~~.